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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/543,114

01/12/2006

Vincenzo Varriale

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08/05/2008

AKERMAN SENTERFITT

P.O. BOX 3188

WEST PALM BEACH, FL 33402-3188

EXAMINER

TIETJEN, MARINA ANNETTE

ART UNIT

PAPER NUMBER

4177

MAIL DATE

DELIVERY MODE

08/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/543,114	Applicant(s) VARRIALE, VINCENZO	
	Examiner MARINA TIETJEN	Art Unit 4177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8,9,17-25,27,28 and 36-40 is/are rejected.
- 7) ☒ Claim(s) 7, 10-16, 26, and 29-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/22/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/22/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 2, 8-9, and 27-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Regarding claim 2, the phrase "and/or" renders the claim indefinite because it is unclear whether "and" is positively recited or "or" is positively recited.
4. Claims 8 and 27 recite the limitation "the fulcrum" in lines 2 of Claims 8 and 27. There is insufficient antecedent basis for this limitation in the claim.
5. Claims 9 and 28 recite the limitation "a lever of the first kind" in line 2 of Claim 9 and lines 1-2 of Claim 28. It is unclear what "the first kind" is referring to.

Claim Rejections - 35 USC § 102

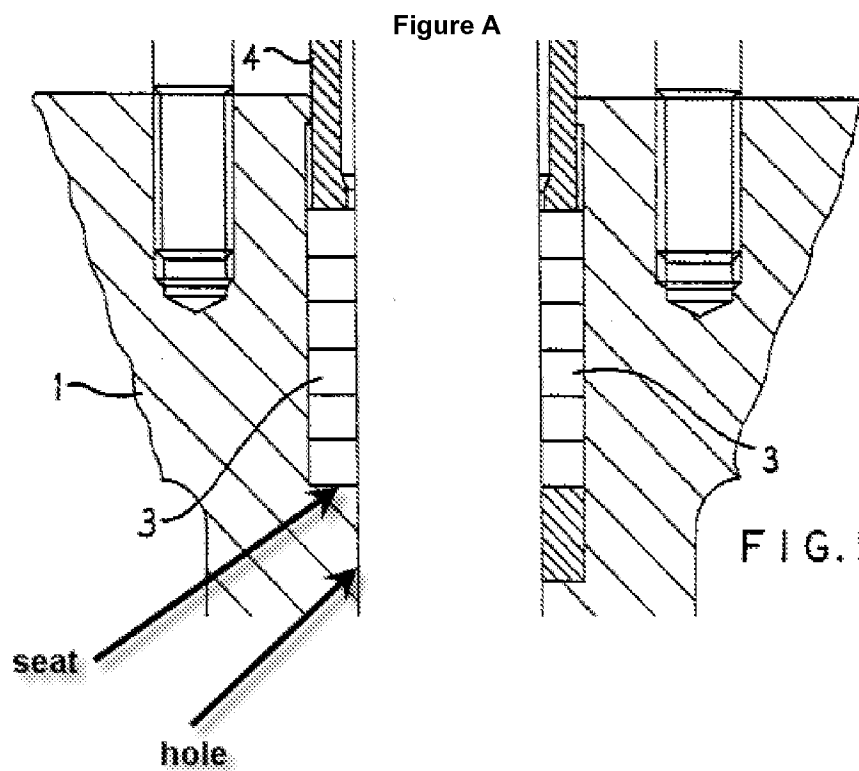
6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Reynolds (US Patent No. 5,456,447).**

Regarding Claim 1, Reynolds discloses a stuffing seal (Fig. 1) comprising: a case 1 (Fig. 1) provided with an axial hole (see Fig. A below) for the passage of a stem 2 (Fig. 1) being mobile with respect to the case 1, a gasket or packing 3 (Fig. 1) arranged in a seat (see Fig. A below) formed within the hole (Fig. A) between the case 1 and the stem 2; and a stuffing box 4, 5 (Fig. 1) for compressing the packing 3 (Fig. 1) between the case 1 and the stem 2; wherein it further comprises releasable means 21, 23, 8 (Fig. 1) for performing an axial thrust on the stuffing box 4, 5 so as to cause a compression of the packing 3 between the case 1 and the stem 2.



Regarding Claim 2, Reynolds discloses the case 1 (Fig. 1) and the stuffing box 4, 5 (Fig. 1) are interconnected by at least a blocking pivot 7 (Fig. 1) parallel to the stem 2

(Fig. 1), the stuffing box 4, 5 being sliding with respect to the pivot 7 for allowing the axial compression of the packing 3 (Fig. 1).

Regarding Claim 3, Reynolds discloses the pivot 7 (Fig. 1) comprises a portion 6 (Fig. 1) axially extending outside the stuffing box 4, 5 (Fig. 1), on that portion 7 being provided the releasable means 21, 23, 8 (Fig. 1).

Regarding Claim 4, Reynolds discloses control means 23, 8 (Fig. 1) are provided for causing the release of the releasable means 21, 23, 8 (Fig. 1).

Regarding Claim 5, Reynolds discloses the releasable means 21, 23, 8 (Fig. 1) comprise at least one elastically deformed element 21 (Fig. 1) and control means 23, 8 (Fig. 1) for causing the release thereof.

Regarding Claim 6, Reynolds discloses the elastically deformed element 21 (Fig. 1) is a spring (col. 3, line 38).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds (US Patent No. 5,456,447) in view of Arnes (US Patent No. 3,601,011).

Reynolds discloses the invention as essentially claimed except for a porous ring and a plane washer provided in sequence between the bottom of the seat within the

hole and the packing to which the packing is axially compressed against the stuffing box when the pressure of a fluid acts against the porous ring.

Arnes teaches of using a plane washer 25 (Fig. 1) and a porous ring 35 (Fig. 1) are provided in sequence between the bottom of the seat within the hole and the packing, wherein the porous ring 35 serves the purpose of a porous, low abrasion bearing or wall surface for the packing which provides a filtered flow of pressure liquid at a desired rate from a pressure chamber to a reservoir (col. 2, lines 41-44), and the plane washer 25 serves the purpose of preventing the porous ring from moving (col. 2, lines 2-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reynolds invention and to include a plane washer 25 (Fig. 1) and a porous ring 35 (Fig. 1) in sequence between the bottom of the seat within the hole and the packing, as suggested and taught by Arnes, for the purpose of allowing the porous ring 35 to serve as a porous, low abrasion bearing or wall surface for the packing which provides a filtered flow of pressure liquid at a desired rate from a pressure chamber to a reservoir (col. 2, lines 41-44), and the plane washer 25 to prevent the porous ring from moving (col. 2, lines 2-3).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds (US Patent No. 5,456,447) in view of Arnes (US Patent No. 3,601,011) further in view of McGregor et al. (US Patent No. 6,789,624).

Reynolds/Arnes disclose the invention as essentially claimed, including the porous ring is a sintered metal ring, however are silent regarding the ring being a net ring.

McGregor teaches of a fluid- porous, particulate restricting, sintered metal material such as a plurality of layers of a wire mesh that are sintered together to form a porous sintered wire mesh (net) screen¹²⁴ (Fig. 3) for the purpose of allowing fluid flow therethrough but prevent the flow of particulate materials of a predetermined size from passing therethrough (col. 7, lines 13-18).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reynolds/Arnes's invention, such that the sintered metal ring was netted or mesh, as suggested and taught by McGregor et al., for the purpose of allowing fluid flow therethrough but prevent the flow of particulate materials of a predetermined size from passing therethrough (col. 7, lines 13-18).

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds (US Patent No. 5,456,447) in view of Herd (US Patent No. 4,340,204).

Regarding Claim 19, Reynolds discloses the invention as essentially claimed, including the packing 3 (Fig. 1) comprises a series of concentric rings, but is silent regarding whether they are made of metal or polymeric resin.

Herd teaches of packing rings 208-211 (Fig. 2A) that are made of a metal that is softer than the stem for the purpose of having low yield and corrosion resistance, and for being able to form a metal back-up seal with the stem without imprint or the galling of the stem (col. 6, lines 30-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Reynolds invention such that the concentric packing rings are made of metal, such as suggested and taught by Herd, for the purpose of providing low yield and corrosion resistance, and for providing a metal back-up seal with the stem without imprint or the galling of the stem (col. 6, lines 30-35).

12. Claims 20-21, 23-25, and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds (US Patent No. 5,456,447) in view of Massey Jr. (US Patent No. 4,054,979).

Regarding Claim 20, Reynolds discloses a valve assembly (Fig. 1) for fluids comprising a stem 2 (Fig. 1) for controlling the opening and the closing of the valve (Fig. 1), a seal 3 (Fig. 1) for maintaining hermetically separated from the external environment the fluid flowing through the valve, wherein the seal is a stuffing seal 3 (Fig. 1) in turn comprising a case 1 (Fig. 1) provided with an axial hole (see Fig. A above) for the passage of the stem 2 being mobile with respect to the case 1; a packing 3 arranged in a seat (see Fig. A above) formed within the hole (Fig. A) between the case 1 and the stem 2; a stuffing box 4, 5 (Fig. 1) for compressing the packing 3 between the case 1 and the stem 2, and releasable means 21 (Fig. 1) for performing an axial thrust on the stuffing box 4, 5 so as to cause a compression of the packing 3 between the case 1 and the stem 2. Robinson does not disclose an additional seal which maintains hermetically separated from an external environment the fluid flowing through the valve, wherein the packing seal is an auxiliary seal able to intervene for

maintaining hermetically separated from the external environment the fluid flowing through the valve in case of breakage or misoperation of the primary seal.

Massey Jr. teaches of using a primary seal 55 (Fig. 2) which maintains hermetically separated from an external environment the fluid flowing through a valve 10 (Fig. 2) for the purpose of sealing an end cap 14 (Fig. 2) from the valve seat 26 (Fig. 2) in advance of an auxiliary seal means 47 (Fig. 2; col. 4, lines 3-7).

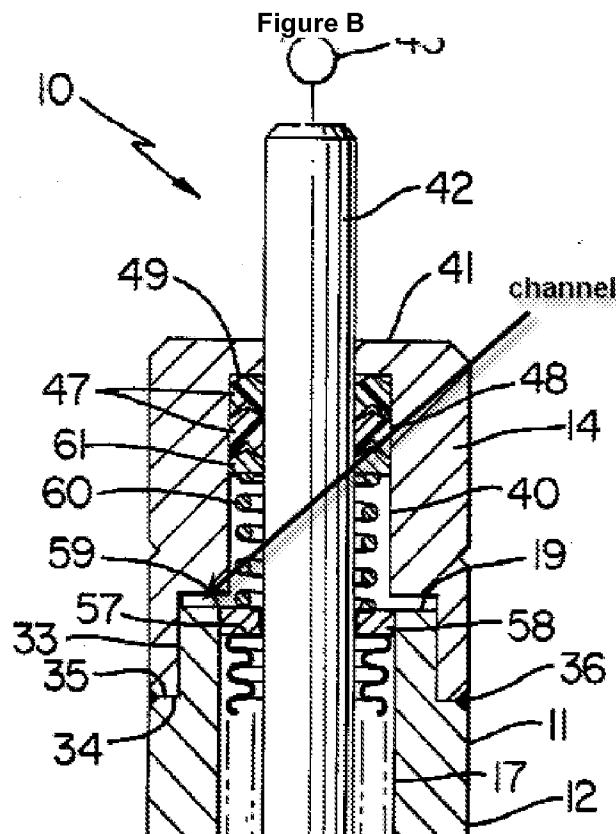
Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Robinson's invention and include a primary seal which maintains hermetically separated from an external environment the fluid flowing through the valve, as suggested and taught by Massey Jr., for the purpose of sealing an end cap from the valve seat in advance of an auxiliary seal means (col. 4, lines 3-7).

Regarding Claim 21, Reynolds discloses the invention as essentially claimed, except for a primary seal which further comprises a bellow seal and a leak detector, the leak detector in turn comprising a chamber, wherein the fluid flows in case of leak, connected through a channel to a volume inside the bellow seal.

Massey Jr. teaches of a primary seal that further comprises a bellow seal for the purpose of sealing an end cap 14 (Fig. 2) from the valve seat 26 (Fig. 2) in advance of a secondary seal means 47 (Fig. 2; col. 4, lines 3-7), and a leak detector (sensing gap 39, col. 4, lines 26-34), the leak detector in turn comprising a chamber 40 (Fig. 2), wherein the fluid flows in case of leak, connected through a channel (see Fig. B below) to a volume inside the bellow seal 55 (Fig. 2), and the leak detector serves the purpose of

allowing any fluid leakage through the bellows 55 (Fig. 2) to be sensed before the secondary sealing means would likewise malfunction (col. 4, lines 30-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reynolds' invention to include a primary seal which further comprises a bellow seal, and to include a leak detector, the leak detector in turn comprising a chamber, wherein the fluid flows in case of leak, connected through a channel to a volume inside the bellow seal, as suggested and taught by Massey Jr, for the purpose of sealing an end cap from the valve seat in advance of a secondary seal means (col. 4, lines 3-7), and allowing any fluid leakage through the bellows to be sensed before the secondary sealing means would likewise malfunction (col. 4, lines 30-34).



Regarding Claim 23, Reynolds discloses the stuffing seal (Fig.1) further comprises control means 8, 23 (Fig. 1) for causing the release of the releasable means 21 (Fig. 1).

Regarding Claim 24, Reynolds discloses the releasable means 21 (Fig. 1) of the stuffing seal (Fig. 1) comprise at least one elastically deformed element 21 and control means 8, 28 (Fig. 1) for causing the release thereof.

Regarding Claim 25, Reynolds discloses the elastically deformed element 21 (Fig. 1) is a spring.

Regarding Claim 39, Reynolds discloses the case 1 (Fig. 1) and the stuffing box 4, 5 (Fig. 1) of the stuffing seal (Fig. 1) are interconnected by at least a blocking pivot 7 (Fig. 1) parallel to the stem 2 (Fig. 1), the stuffing box 4, 5 and the case 1 being sliding with respect to the pivot 7 for allowing the axial compression of the packing 3.

Regarding Claim 40, Reynolds discloses the pivot 7 (Fig. 1) comprises a portion axially 6 (Fig. 1) extending outside the stuffing box 4, 5 (Fig. 1), on that portion being provided the releasable means 21 (Fig. 1).

13. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds (US Patent No. 5,456,447) in view of Massey Jr. (US Patent No. 4,054,979) further in view of Fortmann et al. (US Patent No. 4,848,408).

Regarding Claim 22, Reynolds discloses the invention as essentially claimed, except of a primary seal which further comprises a multilayer bellow seal and a leak detector, the leak detector in turn comprising a chamber, wherein the fluid flows in case

of leak, connected through a channel to a gap defined between two layers of the multilayer bellow seal.

Massey Jr. teaches of a primary seal that further comprises a bellow seal for the purpose of sealing an end cap 14 (Fig. 2) from the valve seat 26 (Fig 2) in advance of a secondary seal means 47 (Fig. 2; col. 4, lines 3-7), and a leak detector (sensing gap 39, col. 4, lines 26-34), the leak detector in turn comprising a chamber 40 (Fig. 2), wherein the fluid flows in case of leak, connected through a channel (see Fig. B above) to the bellow seal 55 (Fig. 2), and the leak detector serves the purpose of allowing any fluid leakage through the bellows 55 (Fig. 2) to be sensed before the secondary sealing means would likewise malfunction (col. 4, lines 30-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reynolds' invention to include a primary seal which further comprises a bellow seal, and to include a leak detector, the leak detector in turn comprising a chamber, wherein the fluid flows in case of leak, connected through a channel to a volume inside the bellow seal, as suggested and taught by Massey Jr, for the purpose of sealing an end cap from the valve seat in advance of a secondary seal means (col. 4, lines 3-7), and the leak detector serves the purpose of allowing any fluid leakage through the bellows to be sensed before the secondary sealing means would likewise malfunction (col. 4, lines 30-34).

However, Massey Jr. is silent on the bellow seal being a multilayer bellows and also does not disclose the channel is connected to a gap defined between two layers of the multilayer bellow seal.

Fortmann et al. teaches of a multilayer bellow seal for the purpose of increasing the ability to expand as well as increasing the life of the bellow (compensator), while the properties, such as pressure strength, remain unchanged from single-layer bellows (compensators) (col. 1, lines 16-22). Fortmann et al. also teaches a channel 10 (Fig. 1) is connected to a gap between two layers 1, 2 of the multilayer bellow seal (Fig. 1) for the purpose of monitoring the interspaces for the possible presence of the medium contained in the interior of the bellow (col. 1, lines 67-86) to determine if there is a leak or excessive pressure (col. 2, lines 32-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reynolds/Massey Jr.'s invention such that the bellow seal was a multilayer bellow seal, as suggested and taught by Fortmann et al., for the purpose increasing the ability to expand as well as increasing the life of the bellow (compensator), while the properties, such as pressure strength, remain unchanged from single-layer bellows (compensators) (col. 1, lines 16-22), and to include the channel as connected to a gap between two layers of the multilayer bellow seal, as suggested and taught by Fortmann et al., for the purpose of monitoring the interspaces for the possible presence of the medium contained in the interior of the bellow (col. 1, lines 67-86) to determine if there is a leak or excessive pressure (col. 2, lines 32-34).

14. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds (US Patent No. 5,456,447) in view of Massey Jr. (US Patent No. 4,054,979) further in view of Arnes (US Patent No. 3,601,011).

Regarding Claim 36, Reynolds/Massey Jr. disclose the invention as essentially claimed except for between the bottom of the seat within the hole and the packing a porous ring and a plane washer are further provided in sequence thanks to which the packing is axially compressed against the stuffing box when the pressure of a fluid acts against the porous ring.

Arnes teaches of using a plane washer 25 (Fig. 1) and a porous ring 35 (Fig. 1) are provided in sequence between the bottom of the seat within the hole and the packing, wherein the porous ring 35 serves the purpose of a porous, low abrasion bearing or wall surface for the packing which provides a filtered flow of pressure liquid at a desired rate from a pressure chamber to a reservoir (col. 2, lines 41-44), and the plane washer 25 serves the purpose of preventing the porous ring from moving (col. 2, lines 2-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reynolds/Massey Jr.'s invention and to include a plane washer 25 (Fig. 1) and a porous ring 35 (Fig. 1) are provided in sequence between the bottom of the seat within the hole and the packing, as suggested and taught by Arnes, for the purpose of allowing the porous ring 35 to serve as a porous, low abrasion bearing or wall surface for the packing which provides a filtered flow of pressure liquid at a desired rate from a pressure chamber to a reservoir (col. 2, lines 41-44), preventing the porous ring from moving (col. 2, lines 2-3).

15. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds (US Patent No. 5,456,447) in view of Massey Jr. (US Patent No.

4,054,979) further in view of Arnes (US Patent No. 3,601,011) further in view of McGregor et al. (US Patent No. 6,789,624).

Regarding Claim 37, Reynolds/Massey Jr./Arnes disclose the invention as essentially claimed, including the porous ring is a sintered metal ring, however are silent on the ring being a net ring.

McGregor teaches of a fluid- porous, particulate restricting, sintered metal material such as a plurality of layers of a wire mesh that are sintered together to form a porous sintered wire mesh (net) screen 124 (Fig. 3) for the purpose of allowing fluid flow therethrough but prevent the flow of particulate materials of a predetermined size from passing therethrough (col. 7, lines 13-18).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reynolds/Massey Jr./Arnes's invention, such that the sintered metal ring was netted or mesh, as suggested and taught by McGregor et al., for the purpose of allowing fluid flow therethrough but prevent the flow of particulate materials of a predetermined size from passing therethrough (col. 7, lines 13-18).

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds (US Patent No. 5,456,447) in view of Massey Jr. (US Patent No. 4,054,979) further in view of Herd (US Patent No. 4,340,204).

Regarding Claim 38, Reynolds discloses the invention as essentially claimed, including the packing 3 (Fig. 1) of the stuffing seal comprises a series of concentric rings, but is silent on whether they are made of metal or polymeric resin.

Herd teaches of packing rings 208-211 (Fig. 2A) that are made of a metal that is softer than the stem for the purpose of having low yield and corrosion resistance, and for being able to form a metal back-up seal with the stem without imprint or the galling of the stem (col. 6, lines 30-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Reynolds invention such that the concentric packing rings are made of metal, such as suggested and taught by Herd, for the purpose of having low yield and corrosion resistance, and for being able to form a metal back-up seal with the stem without imprint or the galling of the stem (col. 6, lines 30-35).

Allowable Subject Matter

16. Claims 7, 10-16, 26, and 29-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Claims 8-9, and 27-28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARINA TIETJEN whose telephone number is (571)

270-5422. The examiner can normally be reached on Mon-Thurs, 8:00AM-4:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quang D. Thanh can be reached on (571) 272-4982. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quang D. Thanh/
Supervisory Patent Examiner, Art
Unit 4177

/M. T./
Examiner, Art Unit 4177